

St. Louis University Toxicology Laboratory Report

Name: JENSEN, JULIE
Age: 40 years

Race: White

Tox # 99-1177
Sex: Female

Requesting Agency: KENOSHA COUNTY CORONER
Summary of Case: FOUND DEAD BY HUSBAND 11-98. POSSIBLE ETHYLENE GLYCOL
CRYSTALS FOUND IN KIDNEY SLIDES.

Blood:

Ethylene Glycol: _____
ETHYLENE GLYCOL: _____ 55 MICROGRAMS/ML

Urine:

Ethylene Glycol: _____
ETHYLENE GLYCOL: _____ 720 MICROGRAMS/ML

Gastric:

Individual Drug Quants: _____
ETHYLENE GLYCOL: _____ 3940 MICROGRAMS/ML

Liver:

Individual Drug Quants: _____
Ethylene Glycol: _____ Negative

Brain:

Individual Drug Quants: _____
Ethylene Glycol: _____ Negative

Requested by: KENOSHA COUNTY CORONER

Date: 12/04/98

Received in Lab by: Diane L Maginn

Date/Time: 05/11/99//11:00 AM

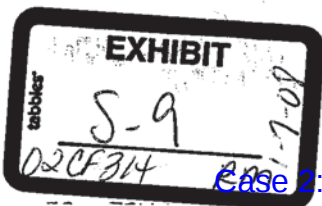
Report by: DR. CHRISTOPHER LONG

Date/Time: 05/14/99//04:07 PM

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Toxicology Specialists Worldwide Since 1970

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Willow Grove, PA 19090
Phone: (215) 657-4900
1-800-522-6671
Fax: (215) 657-2972

January 21, 1999

TO: Kenosha County Medical Examiner's Office
Dr. Maureen Lavin
3508 Washington Road
Kenosha, WI 53144

TOXICOLOGY REPORT OF: JENSEN, Julie

NMS Control No.: 250805

SPECIMENS: Three black glass containers (one containing ~15 mL of blood, one containing liver, and one containing brain), and two white plastic containers (one containing ~50 mL of urine and one containing ~100 mL of gastric [pH ~4, green liquid]) were received on 12/17/98.

EXAMINATION: Analysis Requested - Panel 8102 - Autopsy Toxicology Therapeutic and Abused Drug Screen.

FINDINGS:

Blood

DIPHENHYDRAMINE (by GC & GC/MS)	Positive
SELENIUM (by Atomic Absorption Spectroscopy)	170 mcg/L
LEAD (by Atomic Absorption Spectroscopy)	1.0 mcg/dL
BARIUM (by Inductively Coupled Plasma)	55 mcg/L

Other than the above findings, examination of the specimens submitted did not reveal any positive findings of toxicological significance by procedures outlined in the accompanying Analysis Summary.

COMMENTS:

1. Diphenhydramine (Benadryl®) is an antihistamine with sedative and anti-emetic effects. It is rapidly absorbed following oral administration; however, it is frequently given i.v. Patients taking this medication are usually warned against the operation of complicated machinery, because of its strong sedative effects.

Following a single 50 mg oral dose of diphenhydramine, peak plasma concentrations at 3 hr averaged 80 nanog/mL. A reported steady-state diphenhydramine concentration is 300 nanog/mL.

Signs and symptoms of acute diphenhydramine toxicity include tremor, seizures, fever, respiratory depression and cardiac arrhythmias. Blood levels in fatal overdose cases ranged from 8,000 to 31,000 nanog/mL, and in urine from 40,000 to 64,000 nanog/mL.

2. Selenium is an essential trace metal. It is also used in various industries, e.g., electronic semiconductors and rubber. In medicinals, selenium can be found in shampoos and dietary supplements. The compound exists in elemental, organic and inorganic forms.

Reported reference concentrations of selenium in whole blood of normal individuals range from 58 to 230 mcg/L (mean, 100 mcg/L). In fatalities from ingestion of selenium-containing compounds, reported blood concentrations range from 500 to 18,000 mcg/L (mean, 5900 mcg/L).

3. Lead is an environmental toxicant that may deleteriously affect the nervous, hematopoietic, endocrine, renal and reproductive systems. In the general population the major exposure routes to lead are atmospheric lead (e.g. leaded gasolines) and lead in foodstuffs. Drinking water may also contribute to the total body burden. In children paint chips from lead based paints may be a source of exposure.

In young children, lead exposure is a particular hazard because children absorb lead at a higher rate than do adults, and because the developing nervous system of children are more susceptible to the effects of lead. Blood lead levels in children should be less than 10 mcg/dL according to the Centers for Disease Control and Prevention (CDC).

Blood lead concentrations in the general population with no known high exposure are between 10 to 20 mcg/dL, with males being a few mcg/dL higher than females. The occupational threshold (OSHA) is 40 mcg/dL. The biological exposure index (ACGIH) is 30 mcg/dL. Blood lead is considered to be the best indicator of exposure and body burden in soft tissues or organs.

Acute lead poisoning is a rare event. Death may occur 1 or 2 days post ingestion of 10 to 20 grams of a lead salt by an adult, although there is a report of a survival after an ingestion of about 7 grams of lead acetate. The maximum blood lead concentration determined in that case was 230 mcg/dL. A blood lead concentration of 530 mcg/dL was found in an individual that was shot with a lead bullet. The bullet was retained by the body and death was attributed to lead poisoning.

4. Barium is present in trace amounts in all human tissues, and some studies indicate that it is an element essential to proper growth. The concentration of barium in normal human blood is 80 to 400 mcg/L, most of which is found in the plasma fraction.

In two intentional, but non-fatal barium poisonings serum barium concentrations were 3,400 and 7,800 mcg/L.

Respectfully,



George F. Jackson, Ph.D., TC(NRCC), FTS-ABFT
Forensic Toxicologist

GFJ/pco

This analysis was performed under chain of custody. The chain of custody documentation is on file at National Medical Services, Inc.

The data generated in the determination of the results contained in this report are scheduled to be discarded eighteen (18) months from the date of the original report, unless alternate arrangements are made by you prior thereto.

The remainder of the submitted specimens are scheduled to be discarded six (6) weeks from the date of this report unless alternate arrangements are made by you prior thereto.

**** ANALYSIS SUMMARY ****

8102 - Therapeutic and Abused Drug Screen

Test No. 8102 - Drug Screen by Enzyme Immunoassay on Blood for: AMPHETAMINES, BARBITURATES, BENZODIAZEPINES, BENZOYLECGONINE (COCAINE), CANNABINOIDS (MARIHUANA), METHADONE, METHAQUALONE, OPIATES, PHENCYCLIDINE (PCP) and PROPOXYPHENE; Enzymatic Assay for: ALCOHOL.

Test No. 8102 - Drug Screen Panel II - Gas Chromatography of Extracts on Blood for: BELLADONNA-, CINCHONA-, ERGOT-, METHYLXANTHINE- AND STRYCHNOS-ALKALOIDS, AMPHETAMINE AND AMPHETAMINE-LIKE SYMPATHOMIMETICS, ANTIEPILEPTICS, ANTIHISTAMINES, ANTIPSYCHOTICS (INCLUDING PHENOTHIAZINES, TRI-AND TETRACYCLICS), BARBITURATE AND NON-BARBITURATE HYPNOSEDATIVES, LOCAL ANESTHETICS, NON-DIGITALIS CARDIOREGULATORIES, NON-LSD HALLUCINOGENS, ORAL HYPOGLYCEMICS (TOLBUTAMIDE, CHLORPROPAMIDE), SYNTHETIC ANTICHLORINERGICS, AND SYNTHETIC MORPHINE SUBSTITUTE NARCOTIC ANALGESICS.

Test No. 8102 - Colorimetric Analysis on Blood for: SALICYLATES, ACETAMINOPHEN and ETHCHLORVYNOL.

Test No. 9010 - Gas Chromatography/Mass Spectrometry on Blood for: DIPHENHYDRAMINE and ZOLPIDEM

Test No. 2062 - Ethylene Glycol - Gas Chromatography on Blood for: ETHYLENE GLYCOL.

Test No. 2693 - Metals - Atomic Absorption Spectrometry and Atomic Emission Spectrometry on Blood for: METALS.

Test No. 9142 - Cyanide - Spectrophotometry on Blood for: CYANIDE.

***** END OF REPORT *****